

(PCT Article 36 and Rule 70)

Date of submission of the demand	Date of completion of this report
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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/006532

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
 - ☐ international search (Rule 12.3 and 23.1(b))
 - ☐ publication of the international application (Rule 12.4)
 - ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
 - ☐ the international application as originally filed/furnished
 - ☒ the description:
 - pages 1, 5-8 as originally filed/furnished
 - pages* 2-4, 4a received by this Authority on 31.03.2005 with letter of 31.03.2005
 - pages* _____ received by this Authority on _____
 - ☒ the claims:
 - nos. _____ as originally filed/furnished
 - nos.* _____ as amended (together with any statement) under Article 19
 - nos.* 1-13 received by this Authority on 31.03.2005 with letter of 31.03.2005
 - nos.* _____ received by this Authority on _____
 - ☒ the drawings:
 - sheets 1/1 as originally filed/furnished
 - sheets* _____ received by this Authority on _____
 - sheets* _____ received by this Authority on _____
 - ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages _____
 - ☐ the claims, nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages _____
 - ☐ the claims, nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	<u>6, 7, 12, 13</u>	YES
	Claims	<u>1-5, 8-11</u>	NO
Inventive step (IS)	Claims	<u></u>	YES
	Claims	<u>1-13</u>	NO
Industrial applicability (IA)	Claims	<u>1-13</u>	YES
	Claims	<u></u>	NO
2. Citations and explanations (Rule 70.7)			
1. This report makes reference to the following documents:			
D1: US 4 510 602 A (FORMAZ JEROME ET AL), 9 April 1985 (1985-04-09)			
D2: US 5 623 680 A (MILLS THOMAS L ET AL), 22 April 1997 (1997-04-22)			
2. The present application does not meet the requirements of PCT Article 33(2) because the subject matter of <u>claims 1-5 and 8-11</u> is not novel over the prior art as defined in the Regulations (PCT Rule 64.1-64.3).			
2.1 <u>Claim 1:</u>			
<p>Document D1, which is considered to represent the closest prior art, discloses a control device as defined in claim 1 of the application, having:</p> <p>(a) inputs ("input units 8", column 4, lines 61-68),</p> <p>(b) outputs ("output units 9", column 5, lines 4-16),</p>			

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(c) a memory unit for storing set values (column 2, lines 50-53, "memories 1, 2", which contain "instructions" and "grid signals". A "set value" corresponds to an "instruction" and its corresponding "grid"), and

(d) an allocation unit as defined in claim 1 of the application ("comparator 10", "comparison indicator 16", "gate 7, 14", column 3, lines 37-48; column 4, lines 33-55; and column 5, lines 4-15. See also the example in column 5, lines 31-47), in which control device

(e) at least one of the set values can be set in the memory unit with an independence state value (D) (value "0" in the "grid memory 2", column 4, lines 32-61); and

(f) a digital output value can be allocated to one of the digital outputs by means of the allocation unit, independently of the at least one real input value whose associated set value has the independence state value (D) (column 4, lines 32-61);

(g) the set values having one of the state values 1, 0 or "independence state value" (column 4, lines 32-61).

It should be noted that two bits are required to represent a "set value" with three states ("0", "1", "independent"). Consequently, an "instruction" bit which takes the value "0" or "1", forms in D1 a unit with a corresponding "mask" bit which indicates that the input bit is irrelevant. These bits, combined into "words"

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comprising a plurality of inputs", are stored in D1 in parallel in "memory 1" and "memory 2". "Parallel" means that "memory 1" and "memory 2" are addressed together (column 3, lines 1-3) in such a way that each input set ("instruction", set value) can be invoked and processed together with its corresponding mask word (column 4, lines 40-61; column 5, lines 30-45; claim 1 in D1). D1 uses the term "grid" instead of "mask", but clearly describes the "masking" (column 7, lines 33-45, in D1).

It should also be noted that the term "instruction" with its corresponding "grid" in D1 corresponds to the "set values" of inputs, within the meaning of the present application. This is obvious from column 3, lines 37-41; column 2, line 65 - column 3, line 3; column 4, lines 40-67; column 5, lines 30-45; and column 7, lines 20-25, and also from claim 1 (column 7, lines 45-59 and 60-66) of D1.

The preamble of claim 1, which corresponds to a conventional state automaton, is also disclosed in **document D2** (in D2: memory unit is the "RAM 40", where the "application logic table 100" is stored; column 7, lines 32-35; set values: elements in vectors 102, 104,..., 120 in figure 6; column 6, line 12 - column 7, line 20; and column 4, lines 45-50). Furthermore, document D2 discloses (column 6, lines 24-46) the characterising part of claim 1 (in the example depicted in figure 6 of D2,

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"blank", for example in vector "104", corresponds to the independence state value, while vector "102" takes the values "0" or "1").

2.2 Claims 2 and 3:

Document D2 (column 3, line 58 - column 4, line 11) discloses the subject matter of claims 2 and 3. The "A/D converter 52" in D2 corresponds to the "first evaluation unit" in claim 2 of the present application, and to the "logic gates 54" of the "second evaluation unit" in claim 3 of the present application.

2.3 Claim 4:

Document D1 (column 5, lines 28-58) discloses the subject matter of claim 4.

2.4 Claim 5:

Document D2 (figure 5, rows 94 and 96; column 5, line 66 - column 6, line 1; and column 7, lines 7-12) discloses the subject matter of claim 5.

2.5 Claims 8-11:

Claims 8-11 relate to a process whose features correspond to the technical features of the device claims 1-5. In view of the explanations in points 2.1-2.4 above, claims 8-11 are not novel (PCT Article 33(2) and PCT Rule 64.1-64.3).

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3. The present application does not meet the requirement of PCT Article 33(3) because the subject matter of claims 6, 7, 12 and 13 **does not involve an inventive step** (PCT Rule 65.1, 65.2).

3.1 Claim 6:

Document D2 discloses the subject matter of claims 1-5 but not the additional features of claim 6.

In relation to D2, the problem addressed by the features of the present application can therefore be considered to be that of determining in which circumstances the security state is to be switched on.

The feature which consists in checking whether the real input values deviate for more than a predetermined time from the corresponding set values (claim 6) is only one of several obvious possibilities from which a person skilled in the art would select to solve the stated problem, according to the circumstances, without being inventive. The subject matter of claim 6 therefore does not involve an inventive step (PCT Article 33(3)).

3.2 Claim 7:

The problem addressed by the additional features of claim 7 which have not been disclosed in D2 can

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be considered to be that of checking the integrity of the memory unit.

The checksum feature is a conventional measure. A person skilled in the art would consider the inclusion of this measure in the device described in document D2 an obvious procedure for solving the stated problem. The subject matter of claim 7 therefore does not involve an inventive step (PCT Article 33(3)).

3.3 Claims 12 and 13:

Claims 12 and 13 relate to a process whose features correspond to the technical features of the device claims 6 and 7. In view of the explanations in paragraphs 3.1 and 3.2 above, the subject matter of claims 12 and 13 does not involve an inventive step (PCT Article 33(3)).

4. The application does not meet the requirement of **PCT Article 6** because claims 2 and 9 are unclear. The expression "raw input values" used in claims 2 and 9 is vague and unclear and leaves the reader uncertain about the meaning of the technical feature in question.